

1970

**OPERATING
SUMMARY**

FENELON FALLS

***water
treatment
plant***

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1970

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RESOURCES COMMISSION

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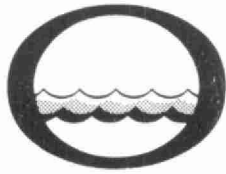
Division of Plant Operations

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Water management in Ontario

Ontario
Water Resources
Commission

135 St. Clair Ave. W.
Toronto 195
Ontario

Once again we have the privilege of submitting to you our latest detailed report on financial progress and technical activity at your water treatment plant.

The statistical information contained in this annual operating summary will undoubtedly be a useful barometer of efficiency. Of particular interest will be the comments and recommendations of the regional operations engineer, who was intimately connected with day-to-day operation throughout 1970.

Together with the extensive cost data provided, this information should assist greatly in your general understanding of the problems met and dealt with, and in furnishing a yardstick for possible future expansion.

D.S. Caverly,
General Manager.

D.A. McTavish, P. Eng.,
Director,
Division of Plant Operations.

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FENELON FALLS
water treatment plant

operated for

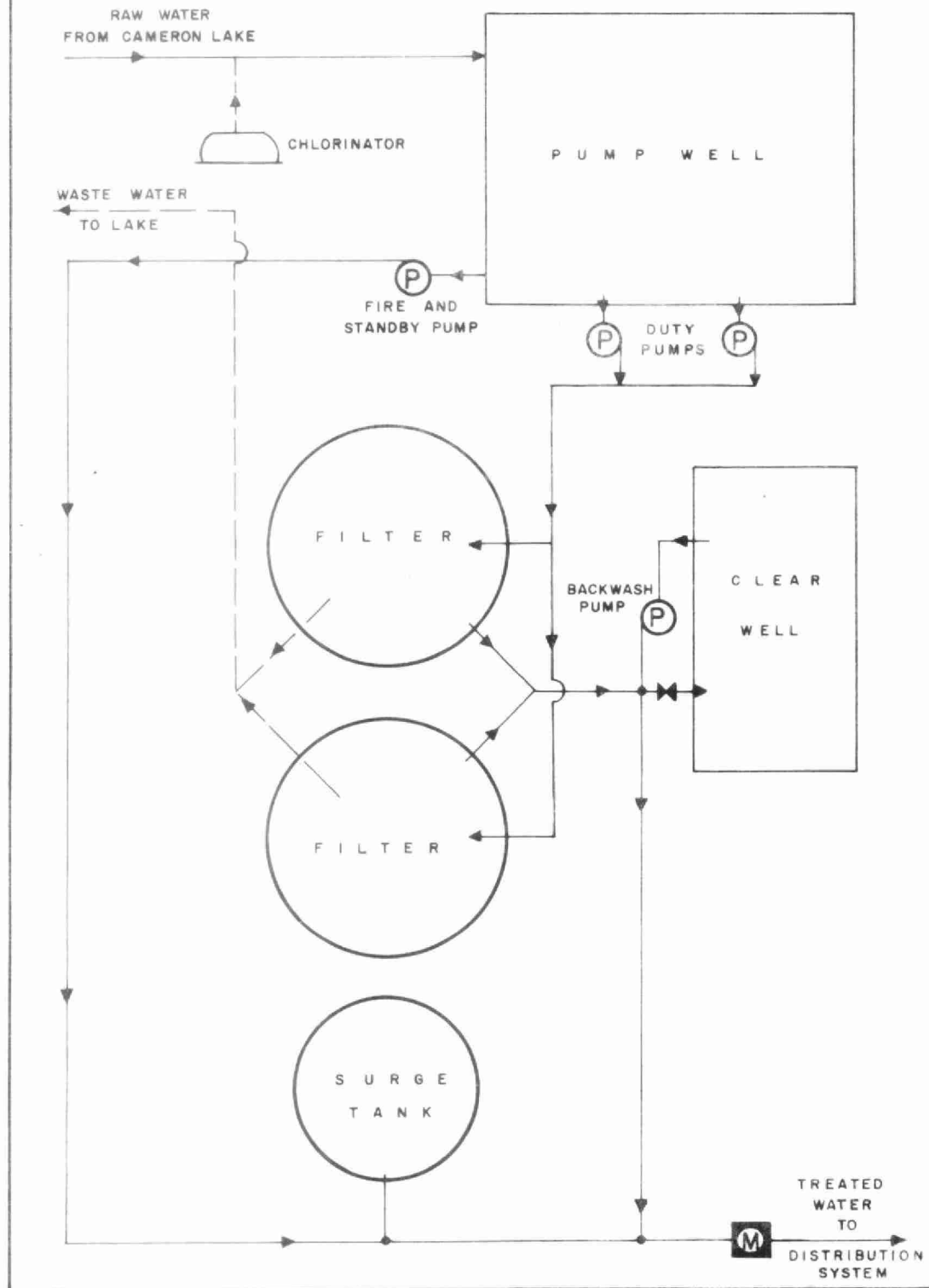
THE VILLAGE OF FENELON FALLS

by the

ONTARIO WATER RESOURCES COMMISSION

1970 ANNUAL OPERATING SUMMARY

FENELON FALLS WATER TREATMENT PLANT



DESIGN DATA

PROJECT NO. 6-0057-60

DESIGN FLOW

180,000 gpd

DESIGN POPULATION

1,300

INTAKE

18" dia corrugated metal, 710 ft,
from Cameron Lake.
Max flow 835 gpm (1.2 mgd)

WET WELL

Size: 15' x 15' x 10.8' max depth
(14,000 gal)

CHLORINATION - in wet well

- Fischer & Porter C-1420
automatic proportioning chlorinator

DUTY PUMPS

Type: Allis-Chalmers double suction
centrifugal pumps, Model SJH
Capacity: Two 170 gpm @ 175' tdh
(490,000 gpd total)

STANDBY and FIRE PUMP

One Babcock-Wilcox & Goldie McCulloch
single-stage, double suction centrifugal
pump, driven by a Wisconsin engine,
model VR4D

FILTERS

Type: Infilco rapid sand pressure
filters
Capacity: Two 126 gpm (360,000 gpd
total)
Filter Rate: 2.5 gpm per sq ft @ 75 psi

CLEARWELL

Size: 15' x 5' 12.3' max depth
(5,800 gal)

BACKWASH PUMP

Type: Canada Pump single-section
centrifugal pump
Capacity: 510 gpm @ 40' tdh

SURGE TANK

One 2000 gal tank with a Brunnes air
compressor, Model H30

'70 REVIEW

FLOWS	DAILY FLOW mil gal	OCCURRING IN THE MONTH OF	MONTHLY FLOW mil gal	OCCURRING IN THE MONTH OF
Average	.17	—	5.14	—
High	.23	June	6.77	June
Low	.14	January	4.31	January

EXPENDITURES

The operating cost for the year was \$14,463.29. This was an increase of \$3,268.92 from 1969 and was due mainly to higher payroll and maintenance costs. The heavy construction program on the distribution system throughout the year was a major factor in the higher payroll costs. The operating costs do not include power, which was paid by the municipality. As of January 1, 1971 the power costs will be included in the total operating cost of the project.

PROCESS DATA

The average daily plant flow for the year was 170,000 gallons. This represents an increase of 30 percent over 1969. Some of the increase could be attributed to the lack of flow records for the lighter months of October, November and December.

From the probability of flow curve, it can be seen that the design flow of 180,000 gallons per day was exceeded 30 percent of the time, compared to 12 percent in 1969.

The quality of the treated water was satisfactory throughout the year. A total of 1410 lbs. of chlorine was used to achieve a residual of 0.5 milligrams per litre in the treated water. The pre-chlorination dosage averaged 2.7 mg/l.

Bacteriological samples taken at the plant and at various locations in the distribution system indicated that adequate disinfection was achieved during 1970. The one sample taken in November which indicated the presence of coliforms was in a new main in the distribution system that was being disinfected.

CONCLUSIONS

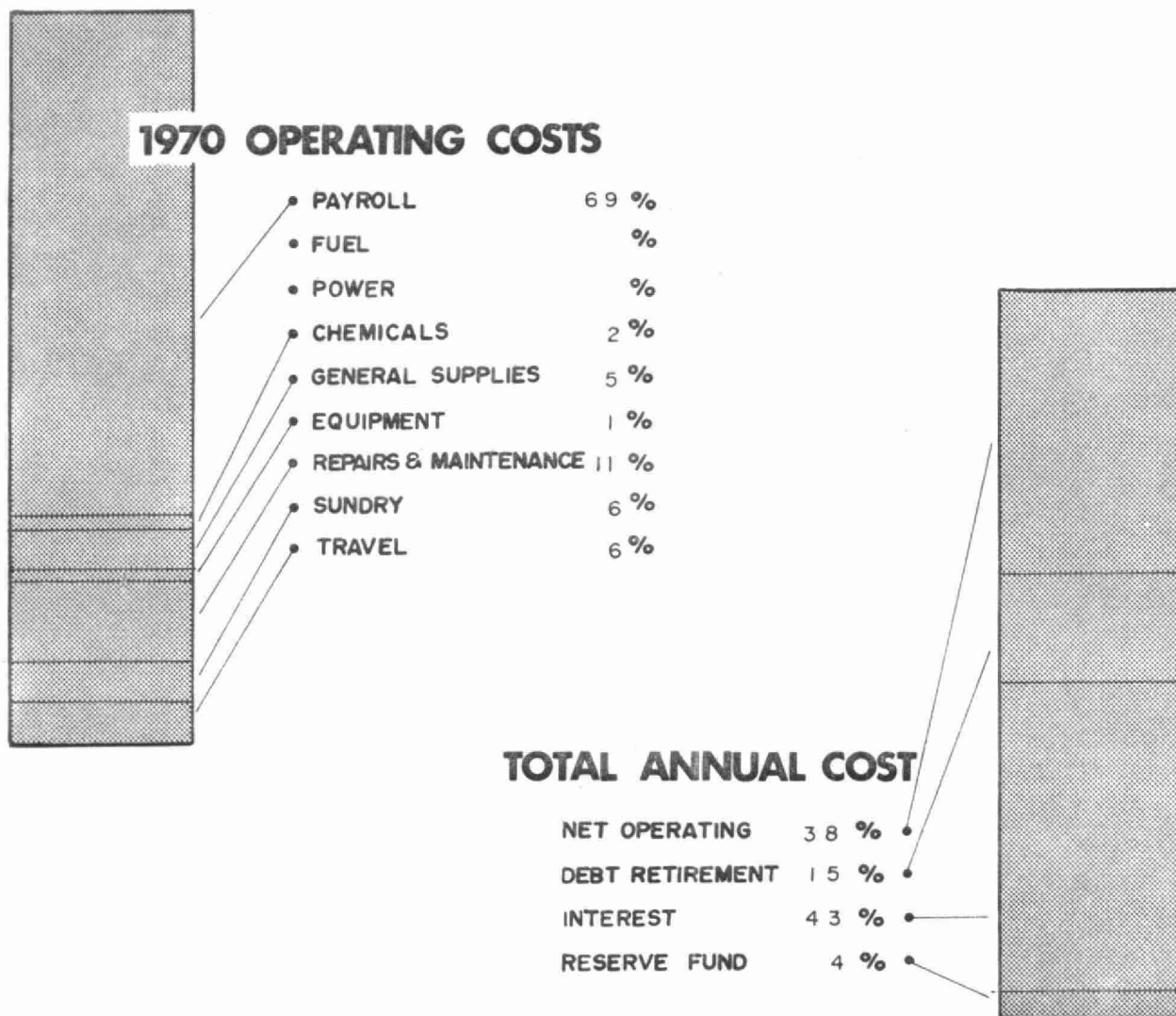
The municipality submitted an application in January, 1971 to have the Ontario Water Resources Commission develop improved facilities under municipal type financing. This application is presently under review by the Ontario Water Resources Commission.

PROJECT COSTS

NET CAPITAL COST (Final)	\$303,660.14
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u>2,531.00</u>
Long Term Debt to OWRC	<u>\$301,129.14</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1970	\$ <u>61,812.03</u>
Net Operating	\$ 14,780.21
Debt Retirement	6,077.00
Reserve	1,372.16
Interest Charged	<u>16,871.12</u>
TOTAL	\$ <u>39,100.49</u>

RESERVE ACCOUNT

Balance @ January 1, 1970	\$ 16,100.65
Deposited by Municipality	1,372.16
Interest Earned	<u>1,072.02</u>
	\$ 18,544.83
Less Expenditures	<u>712.55</u>
Balance @ December 31, 1970	\$ <u>17,832.28</u>



Yearly Operating Costs

YEAR	MILLION GALLONS TREATED	TOTAL OPERATING COSTS	COST PER THOUSAND GALLONS
1966	34.360	\$ 7,241.30	16 cents
1967	44.771	7,527.22	17 cents
1968	48.775	9,072.02	19 cents
1969	47.827	11,194.37	23 cents
1970	62.05 (est.)	14,463.29	23 cents

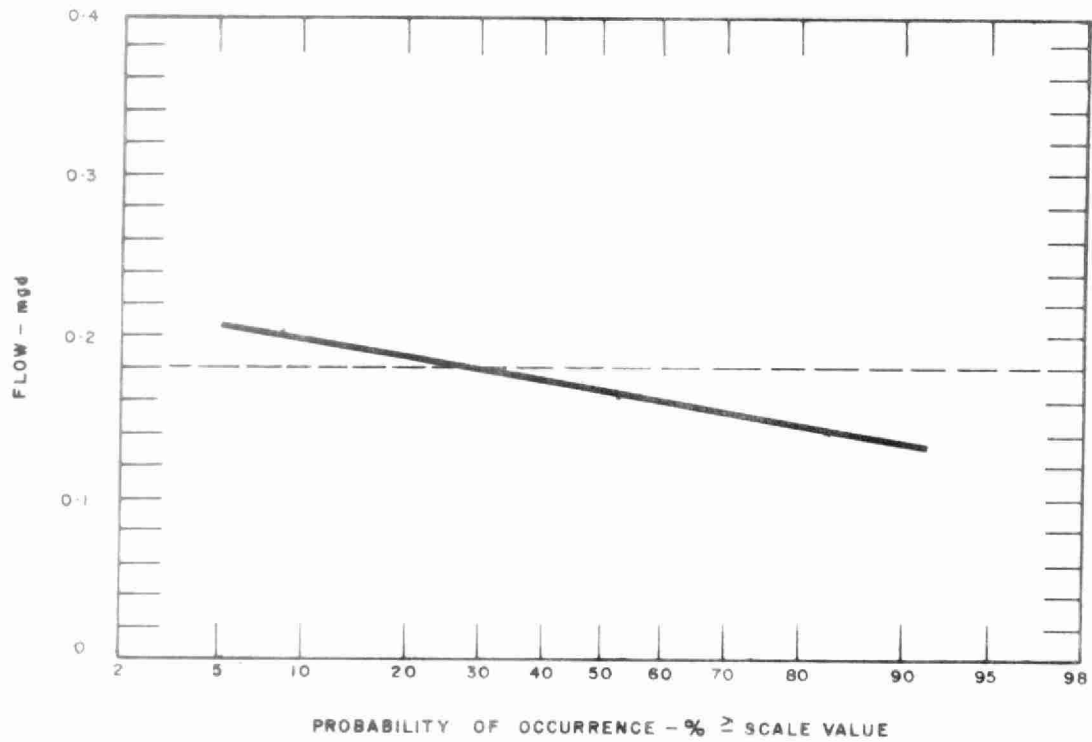
MONTHLY OPERATING COSTS

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICALS	GENERAL SUPPLIES	EQUIPMENT	REPAIRS and MAINTENANCE	SUNDRY	TRAVEL
JAN	997.26	777.57	68.08	-	-	-	78.49	-	42.71	30.41	-
FEB	827.35	582.09	16.10	-	-	93.75	48.18	-	85.23	2.00	-
MAR	1137.43	859.74	43.46	-	-	-	57.20	-	40.32	66.81	69.90
APR	1097.48	683.52	70.65	-	-	-	61.69	-		164.32	117.30
MAY	1168.83	646.91	115.76	-	-	-	74.64	30.90	223.15	32.62	44.85
JUNE	942.27	663.27	32.00	-	-	-	58.71	17.33	22.93	59.08	88.95
JULY	1408.84	553.95	416.77	-	-	124.88	64.41	-	88.00	26.48	134.35
AUG	1502.10	994.52	52.36	-	-	-	.87	25.76	257.78	87.41	83.40
SEPT	1225.62	670.64	164.04	-	-	-	179.50	-	3.99	131.85	75.60
OCT	1049.73	624.70	50.88	-	-	-	40.16	-	177.83	70.81	85.35
NOV	1443.84	744.03	192.77	-	-	-	28.80	51.03	381.35	45.86	-
DEC	1662.54	764.57	234.16	-	-	-	49.60	-	327.84	73.45	212.92
TOTAL	14463.29	8565.51	1457.03	-	-	218.63	742.25	125.02	1651.13	791.10	912.62

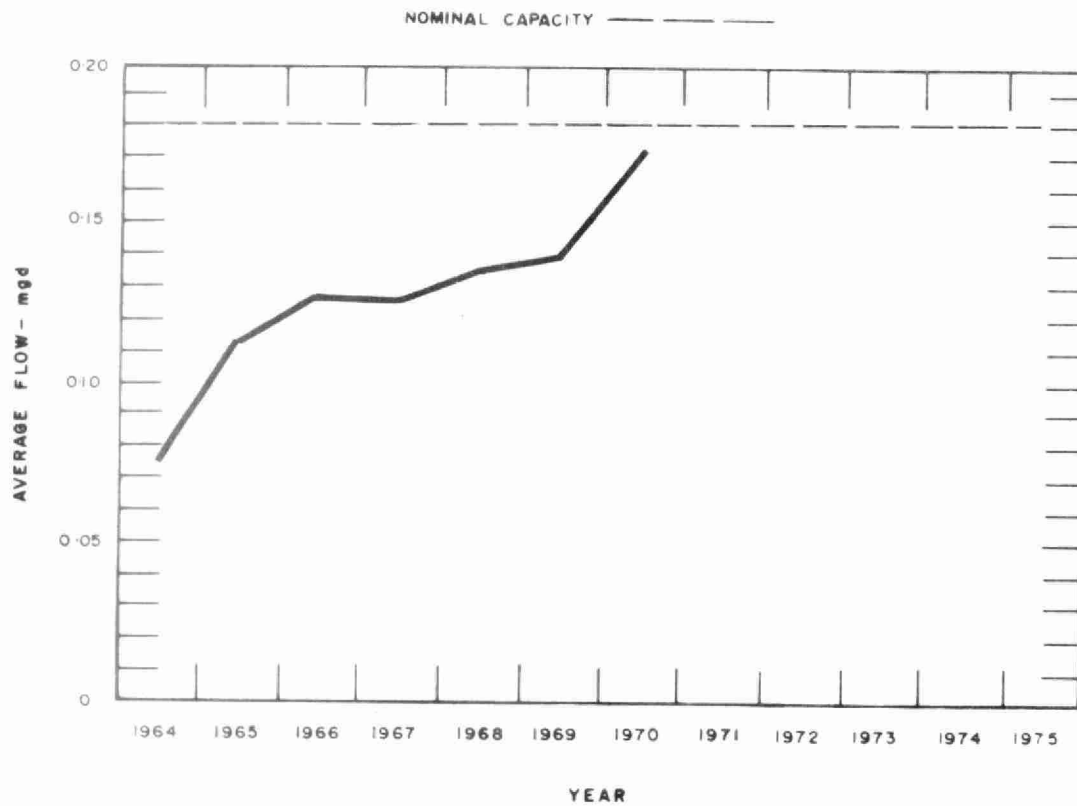
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Note: Total does not include year-end adjustments.

PROCESS DATA



FLAWS



PLANT FLOWS

MONTH	TOTAL PLANT OUTPUT mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM RATE mgd	MAXIMUM DAILY FLOW mil gal	MAXIMUM 3-DAYS' FLOW mgd
JANUARY	4.31	.14	-	.19	.16
FEBRUARY	4.68	.17	-	.40	.25
MARCH	5.00	.16	-	.19	.17
APRIL	4.62	.15	-	.27	.26
MAY	4.60	.15	-	.19	.19
JUNE	6.77	.23	-	.36	.22
JULY	5.69	.18	-	.21	.20
AUGUST	6.05	.20	-	.28	.23
SEPTEMBER	4.52	.15	-	.18	.17
OCTOBER	3.10*	.17	-	.21	.15
NOVEMBER	o/s	-	-	-	-
DECEMBER	o/s	-	-	-	-
TOTAL	-				
AVERAGE		.17	(MAXIMUM VALUES FOR THE YEAR)		
			-	.40	.26

* - 18 days flow

CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES WITH COLIFORMS PER 100 ml OF:					No. of Samples Taken	No. with Coliform Organisms	No. of Samples Taken	No. with Coliform Organisms	CHLORINE USED lb	DOSAGE		RESIDUAL in Plt. Eff. mg/l
	0	1 - 4	4 - 32	32-320	> 320						pre-mg/l	post-mg/l	
JAN	2	0	0	0	0	2	0	16	0	106	2.5	-	.5
FEB	1	0	1	0	0	2	0	28	0	102	2.2	-	.5
MAR	0	1	0	0	0	1	0	14	0	106	2.1	-	.6
APR	1	1	1	0	0	3	0	26	0	106	2.3	-	.6
MAY	0	1	0	0	0	1	0	10	0	134	2.9	-	.6
JUNE	0	0	2	0	0	1	0	20	0	176	2.6	-	.5
JULY	0	0	0	1	0	1	0	2	0	163	2.9	-	.6
AUG	0	0	0	2	0	4	0	10	0	180	3.0	-	.7
SEPT	0	0	2	0	0	2	0	16	0	114	2.5	-	.6
OCT	0	0	0	1	0	1	0	9	0	110	3.5	-	.7
NOV	0	0	1	0	0	1	0	10	1	95	-	-	.5
DEC	0	0	0	0	0	1	0	7	0	108	-	-	.5
TOTAL						20	0	168	1	1410			
AVERAGE	(NOTE: Geometric Mean) 6.8 Coliforms /100 ml									117	2.7	-	.6

FILTER OPERATION

MONTH	TURBIDITY - in J.T.U.				FILTER RUN	
	APPLIED		EFFLUENT		AVERAGE hours	MINIMUM hours
	AVG.	MAX.	AVG.	MAX.		
JAN	<5	<5	<5	<5	48	48
FEB	<5	<5	<5	<5	48	48
MAR	<5	<5	<5	<5	48	48
APR	<5	<5	<5	<5	48	48
MAY	<5	<5	<5	<5	48	48
JUNE	<5	<5	<5	<5	48	48
JULY	<5	<5	<5	<5	48	48
AUG	<5	<5	<5	<5	48	48
SEPT	<5	<5	<5	<5	48	48
OCT	<5	<5	<5	<5	48	48
NOV	<5	<5	<5	<5	48	48
DEC	<5	<5	<5	<5	48	48
AVERAGE	<5		<5		48	
		<5		<5		48

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